

Back Pain Relief

**Key Flexibility and Strength Exercises
to Relieve Back Pain**



John Miller



**Pro-Active
Rehab**

Global BACK CARE

Hi, I'm John Miller. Thanks for downloading the '**Back Pain Relief**' ebook, a musculo-skeletal health management program designed to help you



- maintain good musculo-skeletal function
- restore poor function to good and
- relieve pain.

If you've suddenly come down with an acute 'attack' of lower back pain, there's a high likelihood you'll find speedy relief by doing the exercises in this book. The more often you do them and the longer you do them, the quicker the relief. But once you've done that you'll need to embark on the longer term project of getting your skeleton back into better alignment and strengthening the muscles that support it.

The **Back Pain Relief** ebook contains

- the exercises I do myself to keep my skeleton in good alignment
- an outline of some of the most common causes of lower back pain
- some of the basic principles that underpin both good and bad muscle, bone and joint function
- descriptions of the key flexibility exercises you need to do to get your body back into better alignment
- descriptions of the key strength exercises you can do at home
- descriptions of the key strength exercises you can do at the gym.

This book goes beyond to the heart of the joint and muscle pain. For most people the cause of the pain is tight (and weak) muscles that over years and decades have gradually moved out of alignment. The great majority of people with back pain don't have a regular and systematic strength and flexibility training program.

Only on the very rarest of occasions is joint and muscle pain caused by a lack of rubbing, crunching, heating, icing, hanging-upside-down, vibrating, doping or surgery.

Chances are you've experienced some of those treatments and they haven't provided you with lasting pain relief or restored poor function to good. That's because none of these modalities treat the underlying cause of your back pain - which is weak and tight muscles that have allowed first your pelvis and then the bones above it to move out of alignment - leaving you susceptible to falling victim of an incident that people in good musculo-skeletal health take in their stride.

Most people blame their back pain on 'the incident', not the underlying cause of the problem which is a skeleton so out of alignment and so poorly supported by strong muscles that their body is teetering on the edge of the back pain cliff, just waiting for 'the incident' to arrive which will tip them over.

In around 95% of cases, back pain not a medical problem. It's a personally-generated body system dysfunction. The good news is that if the problem has been personally generated there's a better than even chance it can be personally 'ungenerated'. For most people it's a fitness problem (not a medical problem) that they can treat themselves with the right strength and flexibility exercises.

Back Pain Relief

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DEDICATION

This book is dedicated to memory of Professor Frank Pyke, 1941 - 2011, physical educator and exercise physiologist who was a pioneer in the treatment of back pain using the twin modalities of strength and flexibility exercises. Born and raised in Perth, Western Australia, Frank Pyke played a pivotal role in the development of the physical activity sciences as a champion sportsman and sports lover, teacher, lecturer, coach educator, administrator and Life Member of the Australian Council for Health, Physical Education and Recreation.

Muscles move bones out of alignment. That's the bad news. The good news is that if bones have moved bones out of alignment, there is a fair chance they can move the bones back into alignment.

Foreword

The secret to fixing musculo-skeletal pain is getting your body back in alignment. To do this you'll need to strengthen weak muscles and loosen tight muscles, particularly those attached to your pelvis - front, back and sides. In some ways it's a bit like straightening up a tent after the ropes have slackened off.



This book is designed to provide you with: -

1. clues as to what may be causing your musculo-skeletal pain
2. detailed descriptions of the key flexibility and strength exercises that hundreds of people have used to get themselves back into better alignment and pain free.

Millions of people the world over are experiencing musculo-skeletal pain, much of it personally generated. In a sense this is good news, because if *you've* caused the pain yourself, there's a better than even chance *you, yourself* can get rid of the pain.

From my surveys of corporate groups, over 50% of people are experiencing constant pain. They give themselves 5/10 or less for the current condition of their musculo-skeletal system. Most have resigned themselves to putting up with this pain for the rest of their life. Because they don't know the cause of their pain, it's pot luck whether their treatment plans will work. Frequently they don't.

The passive therapeutic treatment they've undergone has failed to restore poor function to good. In the main that's because the treatments have not addressed the cause of the pain, plus their therapists have not encouraged them to embark on a regular and systematic strength and flexibility training program.

80 80 80 80

With over 40 years experience in the PhysEd and fitness industries I firmly believe that for 80% of people there is an 80% chance they can get their musculo-skeletal system back to 80% of good function within 80 days, if they are diligent. **Imagine** if you could reduce your back pain by 80%? Well, based on my experience you can, not in all cases, but in a significant proportion.

Primary Health Care for Joint and Muscle Pain

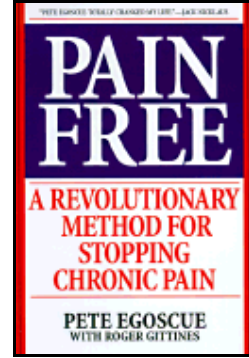
The foundation of primary health care for joint and muscle pain is what you do for yourself. It's the strength and flexibility exercises *you* do that provide you with the best chance of getting your body back into better alignment and pain free.

All the other therapies are complementary to what you do yourself. At best they may speed up the rehab process. What they won't do is take the place of the strength and flexibility exercises you need to do for yourself.

My back got better when I started to do the selection of the exercises recommended in this book - every night in front of TV for a couple of hours.

I will always remain indebted to the woman who pointed me in the direction of Pete Egoscue AND HIS BOOK, 'Pain Free'. It was from Pete Egoscue that I learnt the three basic principles of musculo-skeletal dysfunction upon which this book is based:

- bones do what muscles tell them to do
- the cause of the pain is rarely at the site of the pain - trauma excepted
- form (good skeletal alignment) follows function (the ability to adopt the postures and do the exercises that people in good musculo-skeletal health can do).



Three key principles of my own are:

- in our culture it's a big ask expecting to stay healthy without keeping yourself fit
- it's an even bigger ask expecting to get better by having someone do something to you; sooner or later you have to do something for yourself
- musculo-skeletal dysfunction is usually a fitness problem (a lack of strength and flexibility) and the chances of fixing a fitness problem with a medical solution are quite remote.

John Miller

I can give you
the program
but I can't do
it for you.

Kenneth Cooper
exercise physiologist

1. The cardinal rules of joint and muscle pain



1. (Trauma excepted) muscles move bones out of alignment. That's the bad news. The good news is that if muscles have moved bones out of alignment, there is a fair chance they can move the bones back into alignment.
2. The cause of the pain is rarely at the site of the pain. Once muscles attached to the pelvis draw the pelvis out of alignment, the bones above and below move out of alignment 'in sympathy.' In particular we need to do exercises square up the pelvis.
3. Form (good skeletal alignment) follows function (the ability to successfully perform a range of postural/flexibility exercises).
4. If one 'part' (your lower back) of the skeleton is in pain, then you can be pretty certain that you have a system problem, not just a 'part' problem. Fix the system and the parts will look after themselves.
5. A high proportion of joint and muscle pain is personally-generated. In a way that's good news because chances are it can be personally ungenerated.
6. If you want to be pain free within the next hour or so, go to the chemist. But if you want to be pain free within the next 6 months (maybe more, maybe less) start doing the exercises that will get your skeleton back into better alignment. NOW!
7. The more often you do the re-aligning exercises and the longer you do them for the quicker your skeleton will get back into better alignment.
8. Pain is a symptom that the bones on either side of a joint are out of alignment. Get them back into alignment - and the symptom of the misalignment will disappear.
9. Most joint and muscle pain is a fitness problem not a medical problem. Which begs the question, 'Why are you going to a medical practitioner when you should be going to a fitness practitioner?'
10. Hippocrates said, 'The physician speaks with more authority if he's had the disease.' Rarely is joint and muscle pain a disease – it's most frequently a personally-generated dysfunction caused by a body in poor musculo-skeletal condition. Someone who has relieved their joint and muscle pain is usually a useful source of advice. When it comes to the personally-generated body system dysfunctions, YouTube is becoming a better source of advice than the surgery.
11. Most medical practitioners don't know how to diagnose the underlying cause of joint and muscle pain. The best they can do is shoot their customers off to the radiologist.
12. Generally speaking, the advice you're likely to receive about causation from a radiologist will be unhelpful. All the radiologist does is determine 'what is', not what's caused 'what is'. The radiologist doesn't comment on causation, that's the doctor's job. You're caught in a vicious medical cycle.
13. If the doctor and the radiologist can't determine causation you can be certain that the prescription to fix the problem will be inadequate in the extreme.

14. The Australian National Health and Medical Council opinion on causation is particularly unhelpful:

'The majority (approximately 95% of cases) of acute low back pain is non-specific; serious conditions are rare causes of acute low back pain.'

The term, 'non specific' is code for 'it doesn't have a cause'.

The Arthritis Australia website is particularly vague as to the cause of osteoarthritis. It has nothing to say about skeletal alignment or which exercises to do to improve it. One is left with the opinion that joint inflammation (*arthro* – bone, *itis* – inflammation)) comes from 'out of the blue'.

15. This leads to 'the usual treatment' – passive therapy that involves rubbing, crunching, strapping, heating, and vibrating.
16. Passive therapeutic treatments are well nigh useless. Joint and muscle pain is not caused by a lack of imaging, rubbing, crunching, strapping, heating, vibrating or doping.
17. Surgery may be necessary in the case of trauma and if particular joints (hips and knees) are beyond personal repair. Research indicates that a high proportion of people who have had back surgery back feel little better after the surgery than before. Many feel worse.
18. The missing link in the treatment process is the flexibility (and strength) exercises people have to do themselves. The treatment cannot be outsourced to a passive therapist or a chemist.
19. For 80% of people there's an 80% chance that they can get themselves back to 80% of 'good nick' in around 80 days if they're diligent.
20. It's a big ask expecting to stay in good musculo-skeletal health without a good strength and flexibility training program.
21. It's an even bigger ask expecting to get better by having someone do something to you; sooner or later you have to do something to yourself.
22. When it comes to relieving joint and muscle pain, 'Nothing in the world can take the place of persistence. (Calvin Coolidge).

It's a big ask
expecting to get
better by having
someone do
something to
you: sooner or
later you have
to do something
to yourself.

2. Are you ready for a breakthrough – or more of the same?

Back Pain Relief is a program designed to give you insight into what has caused your musculo-skeletal system to become dysfunctional and to provide you with some of the key flexibility and strength exercises you need to do to restore poor function to good.

The pain you're experiencing is a symptom that your skeleton is out of alignment.

If you do the exercises outlined in this book on a regular and systematic basis, you can expect a dramatic improvement in your musculo-skeletal health. As your skeleton becomes better aligned, as the muscles designed to support it in better alignment become stronger, you can expect your pain to decrease.

If you've got back pain, after a couple of months doing the exercises I recommend, for a couple of hours a day, you should feel a whole lot better. You may start to feel an improvement within a few days.

Most people underestimate the time they need to spend doing the exercises. For instance, initially I recommend you do the hip crossover for about 40 minutes, five minutes one side, five minutes the other side, over and over again. In the supine groin, static back and hip crossover exercises let gravity do the work of relaxing some of the deeper muscles that have taken your body out of alignment. It's because of the time it takes that I recommend you do the exercises while you're watching TV.

Hippocrates said something to the effect that the physician speaks with more authority if he's had the disease. Well, lower back pain is not a disease and I'm not a physician, but I can tell you one thing, I've experienced serious back pain and it got better by spending the time doing the exercises I recommend. I'm pretty certain that if you are diligent and willing to spend time on the floor doing the exercises I recommend, you can fix yours up too.

So, are you ready for a breakthrough, or more of the same?

Always keep in mind that for the majority of people, back pain has been a long time in the making. Over the days, weeks, months, years and decades muscles have been gradually taking the bones of the skeleton out of alignment – to the point where you're standing on the edge of the back pain cliff waiting for an incident to come along that will tip you over the edge. Chances are you'll blame the incident not the years of creeping misalignment.

3. Personally-generated musculo-skeletal dysfunction

In this book I keep referring to the concept of personally-generated musculo-skeletal dysfunction.

Here's what happens.

Over the weeks, months, years and decades, muscles become weaker and tighter and move bones out of alignment. You advance closer and closer to the back pain cliff without noticing it. You could be 99% of the way to having a herniated disc and you think, 'My back's not in bad shape.'

Along comes an incident - something as innocuous as lifting a box off the floor, swiveling around to pick up a book ... that tips you over the edge.

The incident gets the blame.

The underlying, personally-generated cause is ignored.

You're treated as though you're injured, the injury being caused by an incident that appears to be external to you.

However, the enemy is within; it is us!

Anyway, to cut a long story short, that fact that your joint, muscle, ligament and tendon pain is personally generated is good news, because by doing the exercises I recommend there's a good chance you can personally 'ungenerate' it.

I'd like you to focus on these questions:

1. What is it that I've done to myself that has caused the vertebrae in my lower back to move out of alignment?
2. What could I have done to avoid it?
3. What can I do to restore poor function to good?

*Treat manipulative therapy as counting for only 20% of the rehab process.
What you do for yourself counts for the other 80%.*

4. The knowledge gap

When it comes to searching for the cause of back pain, there appears to be a gap in both literature and practice about what to look for and where to look for it.

The gap extends from medical research, through radiology departments, into surgeries and from there spreads out through the broad range of therapeutic modalities.

There is a cause of lower back pain, in fact it is usually more than one cause; you just have to know where to look for it.

There are clues that are not difficult to detect. Think about it, we're dealing with body mechanics here. If we were motor mechanics we'd be out of a job if we didn't know what to look and listen for when someone brought their car in for repair.

A frequent cause of back pain is a herniated disc or as one radiology report outlined, '*... there is a central disc protrusion with a focal annular tear ... facet joint arthropathy and ligamentum flavum hypertrophy ... there is a disc bulge which is paracentral to the left side and extended in to the foramen and far laterally ... there is mild crowding of the cauda equine*

Whilst it's all well and good to know what's going on in your back, we need to go back a stage and find out what has caused the '*central disc protrusion with a focal annular tear ... facet joint arthropathy, ligamentum flavum hypertrophy ... and disc bulge.*'

Overlooking the need to search for the cause is why people end up at the chemist shop. But pain masked is not problem solved. Back pain is not caused by a lack of Ibuprofen, Panadol or Oxycodone! Neither is it caused by a lack of rubbing, crunching, heating and vibrating.

Whilst this may be a generalization, in the manipulative therapy industry there is always the temptation to rub, crunch, heat, vibrate and shock the spot where it hurts and not treat the underlying cause(s) of the problem. This is understandable; it's what the customer expects. It's the quickest way to temporarily relieve pain. How good it is in the long term is debatable, particularly if the problem is generated by a lack of strength and flexibility in parts of the body far removed from the place where it hurts.

As a rule of thumb, if the problem is generated by a lack of strength and flexibility then failure to prescribe strength and flexibility exercises falls well short of the mark of best practice.

The cause of the pain is rarely at the site of the pain. Once muscles attached to the pelvis draw the pelvis out of alignment, the bones above and below move out of alignment 'in sympathy.' We need to do exercises that get these bones back into alignment.

5. The genesis of lower back pain

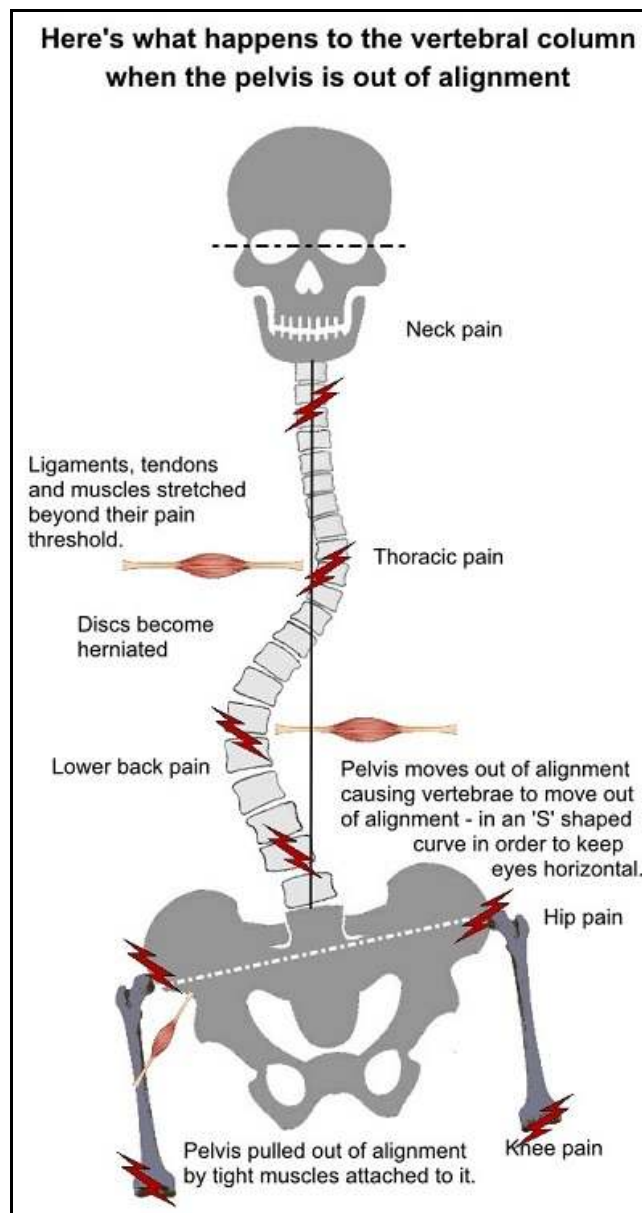
LOWER BACK PAIN

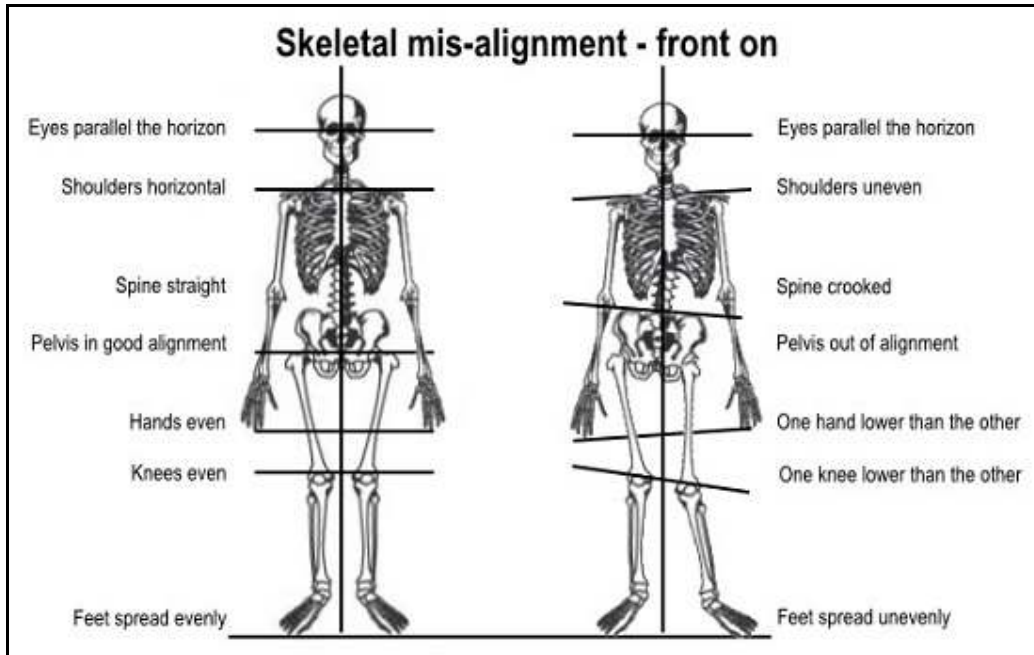
Lower back pain is the most frequently reported occurrence of joint and muscle pain. Some, but only a small proportion is the result of trauma. People have accidents.

Some is alleged to be the result of lifting. However most back pain allegedly caused by lifting is personally-generated. If the skeleton is already out of alignment, if muscles are weak, then lifting a leaf off a lawn is enough to send some people 'over the edge'.

So who do you blame?

1. Tight muscles for taking first the pelvis and then the bones above it out of alignment.
2. Weak muscles for their inability to support the skeleton while lifting, pushing, pulling etc ...

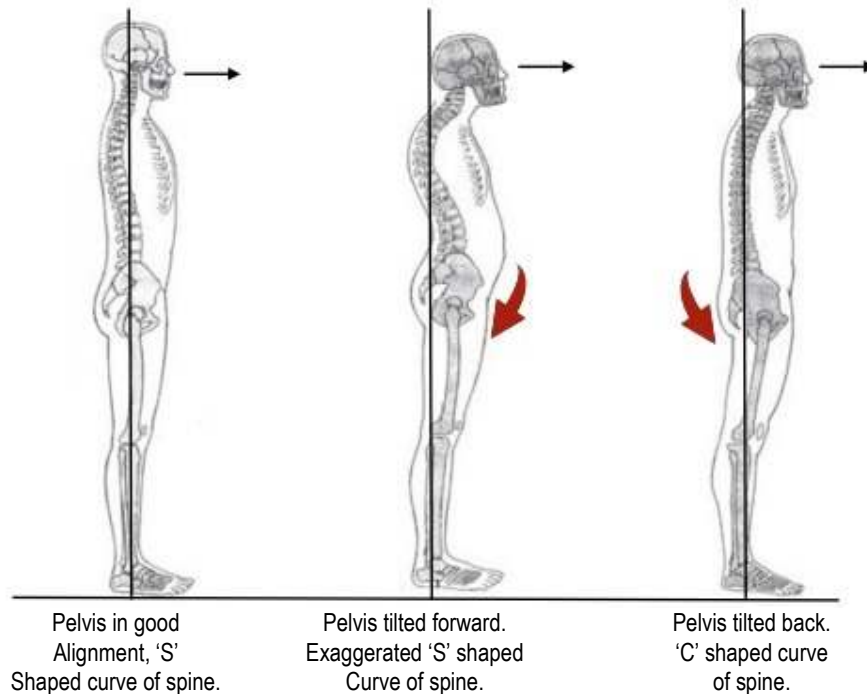




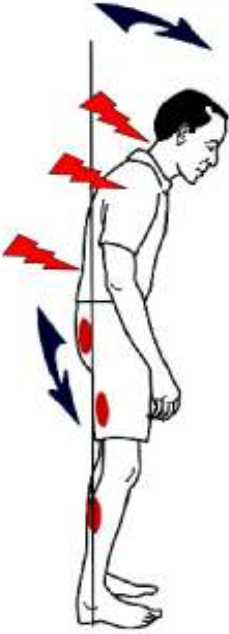
If pelvis is out of alignment, the spine bends and twists in order that the eyes can look straight ahead and remain parallel to the horizon. When vertebrae are out of alignment, ligaments, tendons and muscles are stretched beyond their pain threshold. Discs become herniated.

Looking at the spine and pelvis side on ...

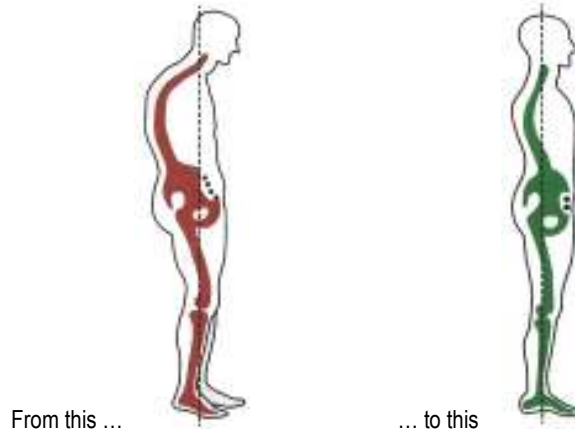
Spinal mis-alignment - side on



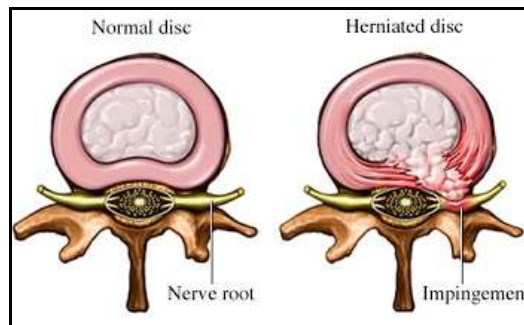
THE (EXAGGERATED) CLASSIC POSTURE OF SOMEONE WITH LOWER BACK, NECK AND SHOULDER PAIN

<p>Due to the action of tight muscles attached to the pelvis - front, back and sides - but particularly the hamstring and buttock muscles, the pelvis is taken out of alignment.</p> <p>There's collateral damage as bones in the lumbar spine are dragged out of alignment.</p> <p>The 'S' shaped curve of the back becomes a 'C' shape.</p> <p>Ligaments, muscles and tendons are stretched, beyond their pain threshold, resulting in continuous pain.</p> <p>Discs prolapse, with the nucleus pinching the spinal column. It feels like someone's shoving a red-hot poker in your back every time you sneeze or cough.</p> <p>Your experience sciatic pain as the prolapsed disk pinches the sciatic nerve</p>	 <p>Tight calf, hamstring and buttock muscles pull pelvis back and down.</p>	<p>Bones in the upper part of your spinal column are pulled out of alignment.</p> <p>Head and shoulders move forward placing stress on soft tissues around the neck and shoulders. It's a principal cause of sore shoulders.</p> <p>It feels like your upper back, neck and shoulders are on fire.</p> <p>You're always hanging out for a neck and shoulder massage.</p> <p>You're always off to the therapist to 'pop' the bones back into alignment.</p> <p>Back pain is not due to a lack of rubbing, crunching, heating, vibrating, doping or surgery.</p>
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So what we're looking to do is go



Here's what happens to a pelvis and spine that's out of alignment. Discs herniate. More pain! The treatment? Get the vertebrae back into better alignment and take pressure off the discs.



6. Apportioning the blame for lower back pain

A. YOUR PELVIS IS OUT OF ALIGNMENT

If your pelvis is out of alignment it's highly likely that the bones above and below it will be out of alignment.

B. BLAME TIGHT CALF, HAMSTRING, BUTTOCK, ADDUCTORS, ABDUCTORS and QUADRICEPS MUSCLES - absolutely

Lower back and neck pain is a symptom of a pelvis that is out of alignment.

The pelvis is taken out of alignment due to the action of tight muscles attached to it - front, back and sides - but particularly (in Western, sit-down society) the hamstring and buttock muscles.

There's collateral damage as bones in the lumbar spine are dragged out of alignment.

The 'S' shaped curve of the back becomes a 'C' shape.

Ligaments, tendons and muscles are stretched, beyond their pain threshold, resulting in continuous pain.

Discs prolapse with the nucleus pinching the spinal column. You experience sciatica as the prolapsed disc pinches the sciatic nerve.

Bones in the upper part of your spinal column are pulled out of alignment.

Head and shoulders move forward placing stress on the bones and soft tissues around the neck and shoulders. You end up with sore shoulders and a stiff neck. Few people would realize that the cause of these complaints is a long way away from the site of the pain.

C. BLAME TIGHT MUSCLES AT THE FRONT OF YOUR PELVIS - you sure can

Tight abdominal muscles, tight hip flexors, tight quadriceps and tight adductors (the muscles that bring your legs together) move the pelvis out of alignment – particularly if the muscles are tighter on one side than the other. You can pick up this tightness while doing the **prone frog** exercise.

D. FEET AND LEGS OUT OF ALIGNMENT

Back pain may start with your feet. A large percentage of people can't sit with their legs straight and feet square. Muscles on the side of the lower leg have forgotten that their role is to square the feet off. If the feet aren't square you won't be able to keep your ankles and knees together at the same time. You'll end up with knee, hip and lower back pain as the chain of dysfunction move up the body.

E. BLAME A LACK OF SPINAL MOBILITY. Yep, sure can.

If you can't lie on your back and take your feet back over your head so they touch the floor, you lack spinal mobility.

F. BLAME A WEAK MUSCULO-SKELETAL ECOSYSTEM - definitely

If there's something wrong with one part of the musculo-skeletal ecosystem you can be pretty certain that there's something wrong with other parts. Lack of strength plays a pivotal role in keeping your body in alignment. There are a huge number of muscles involved in this task. Most people don't exercise any of them and then express surprise when they experience back pain. When we're dealing with the musculo-skeletal eco-system, the whole of the system needs to be kept strong, not just a few parts.

G. BLAME MOTION STARVATION? - certainly

A major cause of musculo-skeletal dysfunction is **motion starvation**. We don't move enough. We're not in good enough physical condition to maintain good skeletal alignment. The body that was designed to climb trees, chop wood and draw water can no longer push a pen or tap a keyboard without becoming dysfunctional!

H. BLAME YOUR WEIGHT? – yessiree

Even being a little overweight can alter your balance and tip your body out of alignment.

Being over-weight comes at a huge cost to mobility. You have great difficulty getting onto the floor and standing up again. You have to lie on your bed to put your socks on.

I. BLAME SITTING DOWN? - unequivocally

They say that sitting down is the new smoking. Spend time at work standing up. If that means getting an adjustable workstation, then so be it.

J. BLAME THE CHAIR? - doubtful

How can you injure yourself sitting in a chair? It's not the chair but how you sit in it, whether your calf, hamstring and buttock muscles are loose enough and your body strong enough to allow you to maintain the proper 'S' shaped alignment of your spine.



Balans chair assist in maintaining the 'S' shaped curve of the spine. It does this by taking hamstring and buttock muscles out of the sitting-up-straight equation.

Form (good skeletal alignment) follows function (the ability to successfully perform a range of flexibility exercises). ie. an inability to perform simple flexibility exercises is the best indicator that your skeleton is out of alignment.

7. The complementary role of passive manipulative therapy

1. The twin pillars of primary health care for muscle and joint pain are the strength and flexibility exercises that *you* do to get you body back into better alignment and keep it in better alignment
2. The manipulative and pharmaceutical therapies are complementary to this process –
 - contributing to palliative care and
 - speeding up the rehab process.
3. Musculo-skeletal pain is not due to a lack of rubbing, crunching, heating, vibrating and doping
4. Too often therapy begins and ends with the manipulative and pharmaceutical therapies, without the prescription of a good suite of strength and flexibility exercises
5. Too often the manipulative therapies are directed at the spot where it hurts and not at the muscles that have fallen down on the job of keeping your body in good alignment.
6. Long, slow, deep mechanical massage directed at the muscles attached to the pelvis that are the underlying cause of back pain may be useful.

My comments are not directed at those therapists who make sure their clients are doing the strength and flexibility exercises they need to do to get their bodies in better alignment, as well as practicing the manipulative arts.

SPEED UP THE REHAB PROCESS

What passive manipulative therapy does is speed up the rehab process. What it doesn't do is take the place of the strength and flexibility exercises you need to do for yourself. An intensive process that involves strengthening weak muscles, loosening tight muscles, getting your body back into alignment *and* which also includes the manipulative and pharmaceutical therapies in the therapeutic mix will have a dramatic effect on restoring poor function to good. That's what the next chapter is all about.

My recommendation is that you avail yourself of whatever manipulative and pharmaceutical therapy you can lay your hands on in your quest to speed up the rehab process. Just don't get lulled into the false sense of security that you don't need to do anything for yourself.

If you do the right strength and flexibility exercises for your condition, your body will gradually get back into better alignment, exercise by exercise, day by day, week by week, month by month. 80% of the fix will come from what you do yourself. The other 20% is what you can expect from a wide range of therapies.

If the underlying cause of muscle and joint pain is a lack of strength and flexibility, it follows that the twin pillars on which the rehab process rests are strength and flexibility exercises.

REHABILITATION BAROMETER

<input type="checkbox"/>	Consider the wisdom of the ancients
<input type="checkbox"/>	Drink more water
<input type="checkbox"/>	Improve ergonomic set-up at home
<input type="checkbox"/>	Improve ergonomic set-up at work
<input type="checkbox"/>	Improve manual handling technique
<input type="checkbox"/>	Meditation
<input type="checkbox"/>	Change and break up repetitive tasks
<input type="checkbox"/>	Improve posture at work and home
<input type="checkbox"/>	Anti-inflammatory drugs
<input type="checkbox"/>	Change diet, include nutraceuticals
<input type="checkbox"/>	Lose weight
<input type="checkbox"/>	Change diet
<input type="checkbox"/>	Traditional Chinese medicine
<input type="checkbox"/>	Osteopathy and chiropractic
<input type="checkbox"/>	Massage
<input type="checkbox"/>	Bowen therapy
<input type="checkbox"/>	Acupuncture
<input type="checkbox"/>	Physiotherapy
<input type="checkbox"/>	Improve general fitness
<input type="checkbox"/>	Ice and heat
<input type="checkbox"/>	Strength training
<input type="checkbox"/>	Flexibility training

8. The back pain prescription

So, if you were to ask me, 'What you can I do to eliminate my back pain?' my first response would be to, 'Take responsibility for the cause.' Even if it was caused by a traumatic event, there are there are things you, yourself can do to speed up the rehab process.

I see lots of people with back pain that was caused an incident that that occurred 20 years ago that a fit and healthy person would have taken in their stride. When I give them the once over I can see that tight and weak muscles are preventing them from getting better. I see that passive manipulative therapy hasn't achieved its desired aim.

Take responsibility for the treatment. If, over the years, therapy hasn't done much to restore poor function to good, start doing something for yourself.

Here's the recipe I give to people living in Canberra.

1. Take a couple of weeks off work to devote your full attention and time to your recovery. Treat your rehab as a full time job.
2. Get out of bed and warm your back up with a hot shower.
3. Go for a walk for at least 30 minutes. This will warm you up from the inside.
4. Have breakfast.
5. Spend a couple of hours on the floor doing the **key flexibility exercises** outlined in this book, followed by the 4 key strength exercises.
6. Go out to the Australian Institute of Sport where they have hot and powerful spas. You can probably find a place that has a hot spa somewhere near you.

First go for a swim. If you don't particularly like swimming get a pair of flippers and of goggles.

7. After the swim put ice on your back for 10 minutes then get into the hot spa for 10 minutes and let the jets massage your body, around the site where it's painful and around muscles that are tight. Do this sequence 3 or 4 times. The effect of the heat and cold will be to reduce muscle spasm. While you're in the spa move your pelvis around to help loosen it up – along with the bones directly above it.
8. Go home and have lunch and then spend another hour doing the **key flexibility exercises**.
9. Go for another walk for at least 30 minutes.
10. Spend another hour doing the **key flexibility exercises**.
11. Go back to the spa and repeat the heat and cold treatments.
12. Come home and have a rest before tea, with your feet up in the static back position.
13. Have tea and spend the rest of the evening doing the **key flexibility exercises** on the floor in front of TV.
14. On alternate days go to the gym and do your strength training program.

The reason for the focus on doing physical things during the day is to stimulate the somato-psychic response – it's called the exercise-led recovery. Not only will your back feel better, you'll feel better.

Modify your diet; lay off flour and sugar. For many people this change in diet will provide an almost immediate feeling of more energy; you'll have fewer headaches. You'll lose weight.

Boost your diet with vegetables and fruit. Start taking some of the nutraceuticals. Drink green tea, not coffee

After a fortnight of this routine there's a good chance you'll be feeling much better.

Things change when you change. Your back will get better when you get better.

A high proportion of joint and muscle pain is personally-generated. In a way that's good news because chances are it can be personally ungenerated.

9. My flexibility training program

This chapter contains the **key flexibility exercises** you need to do each day to relieve back pain. They're the exercises I now do three days a week at the gym, after my strength workout. When my back was bad, I did a couple of hours on the floor every night while I was watching television. The exercises are designed to get your pelvis and spinal column back in better alignment and take pressure off the painful spots in your lower back.

You can do them any time during the day.

While you're still in acute pain, I recommend you do the first 3 exercises,

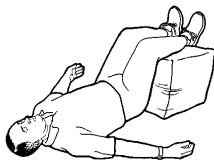
- static back
- supine groin stretch and
- hip crossover

for the periods suggested below. Once you're pain free I'd suggest doing static back and supine groin stretch on an occasional basis and include the hip crossover exercise as part of your normal flexibility routine - for the time it takes to do 10 deep breaths on either side.

I've found lying on the floor at night watching TV is a good time to do the first 3 exercises. All you have to do is relax and let gravity do the work of loosening tight muscles.

The rest of the exercises I do at the gym after my strength training workout.

1. Static back – 20 minutes



This is the most comfortable position for anyone with lower back pain. It lets the muscles supporting the hips relax and takes pressure off the lumbar spine.

Lie in this position for 20 minutes or more.

2. Supine groin stretch – 20 minutes each side



Like the static back exercise, this exercise helps to relax the muscles attached to the thighbone, the pelvis and the bones at the bottom end of your spinal column. If you have any musculo-skeletal complaint I recommend you do this exercise.

Lie with one leg comfortably on an ottoman or chair, the other extended on the floor. Have a smaller block in place to stop the foot of the lower leg from turning out. Lie in this position for 20 minutes or more.

You may notice the sides are different, which suggests that your pelvis is twisted. Gradually, over the days, the weeks and the months this exercise will help relax the muscles that are pulling your pelvis out of alignment; it will get you back into better alignment; pressure will come off your lumbar spine; pain will go away.

3. Hip crossover – 40 minutes



Gradually push the right knee further away from you.

This is a five star exercise for anyone with back pain. It mobilizes the hip, groin and lower back.

Start with the heel of the right foot up toward the top of the left knee. Relax abdomen and lumbar spine and push the right knee further way from you. Then drop the right foot and left knee (together) onto the floor on the left side of your body. Repeat on the other side.

You might find the sides are different, suggestive of a pelvis that's out of alignment. Gradually, over the weeks and the months, this exercise will help get the pelvis back into better alignment.

Build up to 5 minutes one side, then five minutes the other side - for 40 minutes.

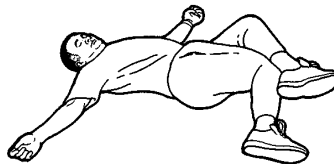
If you can't get one of the feet on the ground because it's too uncomfortable, let the foot rest on a pile of books. Keep changing from side to side every five minutes. As the hip loosens off, gradually start taking the books away. There's a good chance that after 40 minutes the hip will have loosened up enough for the foot and knee to rest on the floor.



Over the weeks and the months this exercise will play a critical role in squaring up your pelvis and getting the bones above it in better alignment. There's a good chance the pain will be dramatically reduced.

Once you've become pain free I suggest a maintenance program of hip crossover for the time it takes to do 10 deep breathes on either side. But, the longer you do the exercise for the greater the benefit.

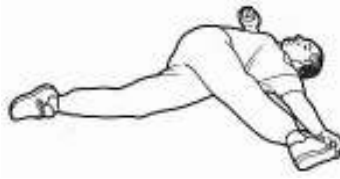
4. Hip stretch



Tuck the left leg over the thigh of the right leg and then pull the right knee over onto the floor on the left side of the body. Push the legs together for 5 seconds, relax and let the legs sink closer to the floor. Repeat three times.

Repeat on other side. You can do this one in bed, under the covers while you read.

5. Super hamstring, butt and back stretch



This is one of the great stretches for hamstring, buttock and all the way through your lower back and up under your shoulder blades. Grab hold of the toe of a straight right leg with the hand of the left arm. If you can't grab your toe, grab your shoe laces, or your sock or the leg of your trousers.

10 deep breaths a side will be a tough assignment. Do an extra minute on the tighter side.

6. Feet over your head



If you really want to give your spine a good workout, take your feet over your head. You'll know you're getting reasonably flexible when your feet touch the ground.

This is a difficult exercise for anyone who is overweight, but when you analyze it, it's not much different from bending down with legs bent while you're standing up.

You could do this when you were 10, how come you can't do it now?

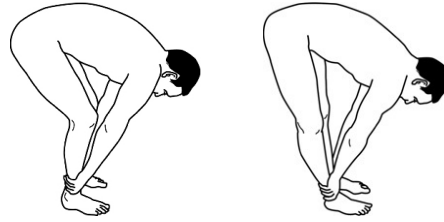
7. Hamstring stretch



Sitting on the floor with legs straight out in front of you, bend down and grab your shins. Bend your legs and grab hold of your shins a little further down. Then straighten your legs. Hold for 10 seconds. Repeat 4 times, going a little lower each time.

Don't overdo it by grabbing hold too low down. Start with a modest stretch and over the days, weeks and months grab hold lower down.

If you're reasonably flexible you'll be able to grab the soles of your feet as you continue lowering your abdomen closer to your knees.



You can also do a similar version of this exercise in the privacy of your shower.

8. Sit up straight buttock stretch



This exercise will provide you with a very good idea of what's stopping you from sitting up straight and getting the natural hollow back into your lumbar spine. It will provide a vital clue as to the cause of your lower back and neck pain.

Start in a sitting position with both legs straight out in front of you. Place your left leg under the right and then your right leg over the left. Lean forward. You should feel the stretch in your right buttock muscle. Repeat on the other side.

If your buttock muscles are loose, you'll be able to sit up straight with your hands clasped behind your back. If they're too tight you'll fall backwards and to one side.

With knuckles on the floor, push forward with hollow in lumbar spine and head and shoulders back. You'll feel the stretch rip into your buttock muscles. One side may be tighter than the other in which case your pelvis is twisted.

Modified sit-up-straight exercises

If you are too tight to sit up with your hands off the floor, try some of these variations. If one side is decidedly tighter than the other, spend more time on it. Hold the stretch for at least a minute.



Lean forward and with every breath you breathe out, lower your body closer to the floor.

20 breaths and you'll get a very good stretch.



Get a friend to push down on the shoulder on the side that you're stretching.

After 20 breaths, creeping down each time you breathe out, you'll sit up much straighter.

9. Supplementary buttock stretch.

Start on hands and knees.

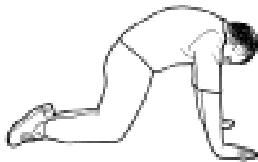


Place the right leg over the left, onto the knees and laces of your shoe and push the right leg back and prop on your elbows. You'll get a marvelous stretch on your left buttock.

Take ten deep breaths and as you breathe out lower your chest a little lower to the floor.

Repeat on the other side.

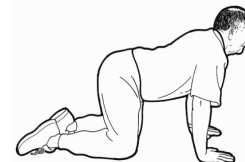
10. Cat stretch



Cat stretch mobilizes thoracic spine.

With hands close together under the chest, tuck the abdomen in, push the pelvis forward and get a high arch in thoracic spine. Breathe out. Alternate with dog stretch.

11. Dog stretch



Helps to restore the natural curve in the lumbar spine. Done with cat stretch, this is an excellent mobilizer for the lumbar spine.

With hands close together under your chest and head up, poke your bottom out and get a hollow in your lumbar spine. Breathe in. Alternate with cat stretch.

12. Prone frog groin stretch



This exercise is designed to put the hollow back in lumbar spine (that sitting down takes out) by loosening off tight groin muscles, particularly the adductors (the muscles that bring your legs together) and the hip flexors.

To begin the prone frog exercise, rest on elbows, knees (with knees as wide apart as you can get them) and feet (with feet together and toes on the floor). Push your knees hard into the floor for 5 seconds, then relax and lower your abdomen closer to the floor. Repeat two times. Over the weeks and months you'll gradually lower your body so your abdomen is also resting on the floor.

When you can rest with your feet and abdomen on the floor you'll know you've really loosened off those muscles in your groin area.

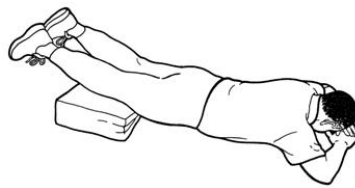
13. Cobra – abdominal muscle stretch

After the prone frog exercise you'll get the best cobra stretch you've ever had.



Begin lying down with your hands a little forward of your shoulders. Then raise your chest off the floor. You can increase the stretch by bringing your hands closer to your shoulders. Maintain the pose for ten deep breathes.

You may like to include the reverse cobra stretch in your routine.



14. Hip Flexor Stretch

Start the exercise with one leg forward and the other on the knee. Lean forward to get the stretch on the hip flexor muscle or your leading leg.

Maintain the stretch for two long, slow deep breathes and repeat on the other side.



15. Quadriceps stretch

The quadriceps muscles are attached to your pelvis. Like hamstring, buttock and hip flex or muscles it needs to be loosened off in order to square up your pelvis.

This stretch will also make a big difference to the way your knees feel. I do it for a few minutes every time I go to the gym.

A kitchen bench is about the right height for this exercise. Unless you're vertically challenged an ordinary office desk will be too low.



Place the toe of your shoe on the bench, get the leg square and knee pointing straight ahead, stand up straight and lean back.

Keep your knees as close together as possible.

Lean back for ten deep slow breathes, leaning back a little further with every breath you breathe out.

You don't have to lean back very far to get a good stretch.

Repeat on the other leg.

The quadriceps muscle on one leg may be tighter than the other, giving you a clue as to why your pelvis is out of alignment and why you have back pain – and most likely, knee pain.

Your aim is to get your knees close together when you do this exercise.

Having trouble keeping your knees close together is a sign that the abductor muscles on the outside of your thighs are too tight. This exercise will help them to loosen them off. Over the weeks and months there's a good chance they will, as you retrain the muscles designed to keep the bones on either side of the knees in good alignment.

If you're suffering from knee pain, this exercise and squats are the two exercises to have high on your list of priorities.

16. Foot flex

I love to finish my flexibility session with the foot flex exercise. Chances are that if you have sore knees you may have difficulty doing this exercise, in which case stick a cushion under your bottom so you don't go down so far.

However, over the weeks and months doing this exercise your knees may come good and you'll find you can spend a few meditative minutes in this position.



A year from now,
you will wish you
had started today.

Karen Lamb

10. A word about sciatica

Sciatica is the pain you experience when the sciatic nerve is pinched, either by a herniated disc or by some of the muscles it passes through on the way down through the muscles of your buttock and thigh. It's a form of electrical interference.

The exercises for fixing back pain may have a significant impact on reducing sciatic pain. By getting your vertebrae back into better alignment, the pressure on a herniated disc is released and it starts to move away from the sciatic nerve.

Similarly loosening off some of the muscles in your buttock and thigh may reduce the pressure on the sciatic nerve.

These lower back and thigh stretching exercises may be particularly helpful.



For 80% of people there's an 80% chance that they can get themselves back to 80% of 'good nick' in around 80 days if they're diligent.

11. Strength training program at home

As well as a flexibility training program you need a good strength training program.

I highly recommend you go to the gym three times a week and take part in an all-body workout.

For now I recommend you start doing the 4 great strength exercises. The beauty of these exercises is that you can do them anywhere, any time, at home or at work, without expensive equipment. It's imperative that you do them - either to restore poor function to good, or to stay in good musculo-skeletal shape.

I find that it is not a difficult assignment to slip into a routine where you do a few strength exercises either as part of your morning exercise routine, or just before you go to bed.

For the strength exercises you might have to build up to it gradually by doing a minute's worth (or less) of exercise in small doses. (For instance, spacing 40 sit-ups out over five sets of 12, 10, 8, 6 and 4 repetitions will add up to a good minute's worth of activity. Sooner or later you'll be able to do 40 on the trot.)

UPPER BODY STRENGTH

Pressups on the toes



King of core strength, plus arm and shoulder strengthening exercises.

The 'men's' pressup. Starting position: fingers forward, thumbs shoulder width apart and body straight. Lower body to the floor so the front of the trouser; shirt and nose almost touch the floor. Then push up. Aim for 25 in 30 seconds. When you can do 40, report back! This is an exercise you need to do at least every second day.

Pressups on knees



Queen of shoulder strengthening exercises.

The 'women's' pressup*. Starting position: fingers forward, thumbs shoulder width apart, lower part of the body resting on the front of your thigh, not your kneecaps and body straight.

Keep the knees, bottom and shoulders in a straight line. Lower body to the floor so the front of the trouser, shirt and nose almost touch the floor. Then push up. Aim for 25 in 30 seconds. When you can do 40 in a minute, report back! This is an exercise you need to do at least every second day.

* It is only a physical education convention that has made this the recommended pressup for women, principally because a lot of women have great difficulty doing even just one pressup on their toes. This is not to say that it's not possible. At 66, Valda who used to come to my fitness classes could do 30 pressups on her toes. Women fitness instructors can blitz a lot of male fitness instructors in the pressups stakes. But, regardless of gender it's the place to start for anyone who has weak shoulders, arms or wrists.

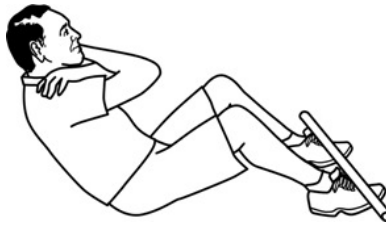
ABDOMINAL STRENGTH - situps in a variety of positions

Back pain goes with weak muscles down the front of your body.

Situps without feet held

The starting position is with your feet flat, shoulder width apart, knees bent at 90 degrees and arms extended with hands resting on the upper part of the thigh.

Sit up so that your fingers get to about the bottom of your kneecap. Build up to doing a minute's worth on the trot.

Situps with feet held

Start in the lying down position with feet supported under a piece of furniture, arms crossed and hands holding on to shoulders.

Sit up far enough for the elbows touch the knees. Lower yourself so your shoulder blades touch the floor and repeat the situp so left elbow touches right knee. When you can do 40 on the trot, report back!

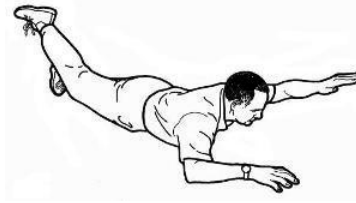
There is conjecture about whether doing situps with your feet held is a safe exercise. The fitness, physical education and physiotherapy professions are evenly divided on this matter. I believe it is safe and that as well as strengthening abdominal muscles, it strengthens the muscles on the front of the lower leg, top of the thighs and hip flexors. It is a very good, all round, front of body strength exercise.

If you find that doing it hurts your back, then stop doing it for a few days, then gradually start doing it again. Or do the situp without your feet held. Start with 5 repetitions and build up. If you feel you shouldn't do it at all, don't do it. Do a search on YouTube for other situp suggestions.

If one 'part' (your lower back) of the skeleton is in pain, then you can be pretty certain that you have a system problem, not just a 'part' problem. Fix the system and the parts will look after themselves.

BACK AND BUTTOCK FUNCTION

Back pain goes with weak muscles down the back side of your body.

Opposite arm and leg raise

A gentle strengthener and mobiliser of the back and buttock muscles. Stage one for back strengthening.

Lift one arm and the opposite leg off the floor. Repeat on the other side for 10 repetitions each side. This exercise is the lead in to the Superman back arch exercise.

Superman

King of exercises for strengthening the muscles on the back side of your body.

Lift knees and feet off the ground first, then chest and arms.

LEG STRENGTH

There is a compelling reason to strengthen the large muscles attached to your pelvis.

Slow squat

Slowly squat down so your backside goes midway between your knees and the floor - and stand up again. If you've got tight calves and Achilles tendons you may need to raise your heels to maintain your balance.

If you have really sore knees you may like to put a bucket or something under your backside to make sure you don't go down too far. If you have trouble getting up, place your hands on a rail and get your arms to lend the thigh muscles a hand.

12. Strength exercises in the gym

If you have any sort of musculo-skeletal dysfunction you need a good, all round general strength training program in the gym. It's an indispensable part of a good musculo-skeletal health program. Over the weeks and months, lift by lift your body will become stronger and more capable of doing every day tasks without breaking down. The gym program is the foundation on which to build specific exercises for particular body parts.

SUPERSET ROUTINE

I recommend you do what's called a superset routine.

In a superset routine you do two exercises 'at the one time'; for instance the bench press, (which involves the muscles that push the weight away from you) alternated with the upright row (which involves the muscles that pull the weight back towards you.).

What this does is keep the general activity in one area of the body, whilst giving each muscle group time to recover before the next set of repetitions.

It saves a lot of time hanging around waiting for muscles to recover. They recover while you're doing the next set of the alternate exercise.

I've grouped the exercises in such a way that you can work through the exercises quickly and systematically at the same time giving each large group of muscles a rest between sets.

I recommend you

- start with the upper body and arms,
- then move to lower body and legs
- then on to upper body again
- and finish off with abdominals, lower back and hip flexor muscles.

In effect you are doing a mini-circuit, but one which is much more effective in increasing strength and muscle bulk.

COMBINATION EXERCISES

I also recommend you do combination exercises - where more than one muscle is strengthened at the same time. For instance in the bench press, both triceps and pectoral muscles get a good work out.

The combination exercise routine saves time, while still giving you a good, general, over-all workout.

SETS AND REPETITIONS

I recommend you do four sets of 12, 10, 8 and 6 repetitions, increasing the weight with each set. That way you get a good mix between improvement in strength and muscle bulk. You need a bit of muscle bulk. Don't be afraid, you're not going to end up looking like Arnold Schwarzenegger!

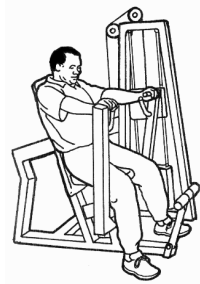
The first weight for 12 repetitions needs to be light enough to provide you with a warm up. You should aim to comfortably reach the 12 repetitions.

Gradually over the weeks and months you'll find that you're able to lift more weight or do more repetitions during each set. Gradually as you become stronger you'll be able to get the 12, 10, 8 and 6 repetitions with increased weights.

NUMBER OF TIMES A WEEK

Three times a week is ideal. Less than that and the improvement in strength is too slow. With once a week you'll find you're always stiff the next day.

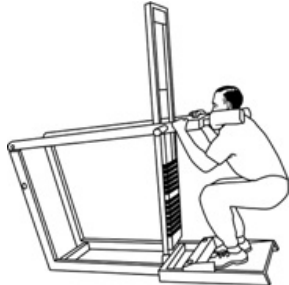
You'd be very short-sighted if you had any sort of musculo-skeletal dysfunction and you didn't have a regular and systematic strength training program at the gym.

THE EXERCISES**Bench press**

Strengthens chest and triceps muscles at the back of your arms.

Upright row

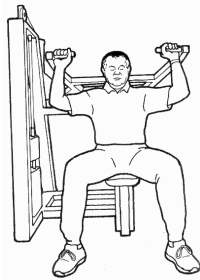
Strengthens muscles of your upper back and biceps, the muscles at the front of your arms.

Leg extension

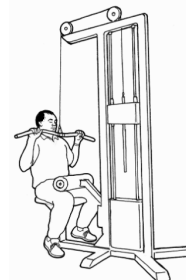
I've chosen the leg extension in this format because it's very good for fixing your knees as well as strengthening thigh and buttock muscles. I recommend you do 3 sets of 12 repetitions. Start with a light weight for the first set and then progressively increase it for the 2nd and 3rd sets.

Leg curl

Strengthens muscles at the back of your thigh.

Shoulder press

Strengthens shoulder muscles and triceps.

Lat pull down

Strengthens long muscles down the outside of the back, and biceps.

Hip flexor



Strengthens the hip flexor muscles that lift the leg up. While you're there, work on strengthening your leg adductor and abductor muscles.

Back strengthener



Strengthens the back. I recommend you do one set 20 or so push-backs. This is a good, dynamic exercise. Start easy and gradually build up to it.

Situps



I recommend you do one set of situps; build up to 40 or 50.

CURL, SHOULDER PRESS AND LAT PULL DOWN

Another recommendation for shoulder press and lat pull down. Do a set of dumbbell curls and then go straight into the overhead dumbbell press; 4 sets of 12, 10, 8 and 6 repetitions. Start off with a weight you can lift comfortably and progressively increase the weight for the 2nd, 3rd and 4th sets. Alternate with the lat pull down exercise.

Bicep curl



Shoulder press



Lat pulldown



TEN POINT MUSCULO-SKELETAL RISK ASSESSMENT

On the next page is the ten point musculo-skeletal risk assessment. The test exercises are:



Pass mark is 70/100. Any score below 50 is an indication of risk or current dysfunction. Less than 30 is typical of a body that's weak, over-weight and out of alignment. The highest score ever recorded was 100/100 The lowest was 6/100. Any score less than 70 is redeemable. All you have to do is train.

13. Ten point musculo-skeletal risk assessment

1. **Current musculo-skeletal condition**

Wretched Terrific

0	1	2	3	4	5	6	7	8	9	10

2. **Fatness. How close are you to your ideal weight?**

Scores based on kilos over your ideal weight. #

>20	20	18	16	14	12	10	8	6	4	2
0	1	2	3	4	5	6	7	8	9	10

3. **Leg strength - squat**

Squats – to exhaustion. Bottom must get half between your knees and your ankles. Recommend use of a heel raise. #

<5	5	8	11	14	17	20	30	40	50	
0	2	3	4	5	6	7	8	9	10	

4. **Abdominal and front of body strength - sit-ups with feet held – to exhaustion #**

<5	5	8	11	14	17	20	30	40	50	
0	2	3	4	5	6	7	8	9	10	

5. **Upper body strength – pressups to exhaustion, men on toes, women on front of thighs with knees, bottom and shoulders in a straight line.**

#.....

<5	5	8	11	14	17	20	30	40	50	
0	2	3	4	5	6	7	8	9	10	

6. **Hamstring flexibility - sit and reach**

Sitting on the floor, with feet outstretched in front of you, see how far down past your toes you can reach with your fingers. Keep your knees straight.

Can't touch	Fingers			Palm			Wrist			
0	4	5	6	7	8	9	10			

7. **Buttock flexibility - ability to sit up straight**

With legs crossed and hands clasped behind your back, see if you can sit up straight. Falling backwards on one or both sides scores 0.

Poor

Fall over when hands clasped behind back				Just			Easy			
0	1	2	3	4	5	6	7	8	9	10

Good

8. **Shoulder function - wall test**

Stand with you back to the wall. Place your hands in the surrender position with elbows, forearms, wrists and fingers flat back on the wall. Score 10 if you can do this with ease and a lower score if you can't.

Poor

0	1	2	3	4	5	6	7	8	9	10

Good

9. **Strength training**

Do you have a regular and systematic strength training program for your back, neck shoulders, torso, arms and legs - sessions per week?

No

		1			2					3
0	1	2	3	4	5	6	7	8	9	10

Yes

10. **Flexibility training**

Do you have a regular and systematic flexibility training program for your back, neck shoulders, torso, arms and legs - sessions per week?

No

		1			2					3
0	1	2	3	4	5	6	7	8	9	10

Yes

Form follows function. Bones do what muscles tell them to do.

TOTAL

14. Universal fitness test – fit-for-work, fit-for-life

The Universal Fitness Test involves 5 fitness tests plus an assessment of percent body fat.

1. **20 metre run** - number of 20m laps in 5 minutes This is the classic test of aerobic fitness, superseding the 'beep test'.

One foot must go beyond the line at the end of each lap.

It may take you several attempts to work out the best speed to start off with. You can walk, shuffle, jog or run. If you're running and you run out of puff you can slow down to a walk.

If you're in very poor metabolic health, start off with a slow walk and over the weeks and months gradually pick up the pace. Consult your physician if you feel you may be in very poor cardio-vascular health and request a 'proper' cardio-vascular fitness test.



Warning

You must stop if you feel you could be doing yourself grievous bodily harm.

2. **Situps** - consecutive number of situps until exhaustion - feet held, hands clasping opposite shoulders, coming up so elbows touch the knees, upper back (not head) hitting the ground.

With feet held, the test becomes a front of body muscle test. Leg muscles, hip flexors and abdominal muscles are all involved in the situp process.



3. **Pressups** - consecutive number of pressups until exhaustion - men on toes, women on knees.

Women make sure that your knees, bottom and shoulders are in a straight line.

The classic upper body and trunk strength exercise. Pressups incorporate the plank exercise - in motion.



4. **Squats** - consecutive number of squats until exhaustion. Bottom must go down to mid-way between knees and ankles. Most people will need to use a heel raise to successfully complete the test.

The classic test of leg strength.



5. **Arm hang** – hanging from a bar until exhaustion.

Hang with palms facing away from you.

A large proportion of people are unable to support their own weight at all so be careful and be ready to land safely on your feet if your hands fail to support you.

The classic test of hand strength. No need of a grip strength machine, just you knowing how long you can support your own weight with your hands.



6. Percent body fat

The gold standard for body composition is percent body fat. Theoretically, there is no need to measure how fat people are because generally speaking the fitter they are the closer they will be to their ideal weight. But having said that, it's a useful metric to include in a fitness assessment.



SUPPLEMENTARY TESTS

Flexibility

The third major fact of fitness is flexibility. Tight muscles move bones out of alignment. That's the bad news. The good news is that once you have a flexibility training program muscles can move bones back into alignment again; poor function is restored to good. The body becomes pain free.

Whilst the flexibility tests don't lend themselves to the Universal Fitness Test scoring system, we have included two supplementary tests of flexibility to round out the test battery.

7. Flexibility - sit and reach – test of hamstring flexibility

In a sitting position, with feet outstretched in front of you, see how far down past your toes you can reach with your fingers. Keep your knees straight.

Can't touch	Fingers			Palm			Wrist
0	4	5	6	7	8	9	10



8. Ability to sit up straight - test of buttock flexibility

With legs crossed and hands clasped behind your back, see if you can sit up straight.

Falling backwards on one or both sides scores 0. If you can only just sit up without falling over score 5.

Fall over	Barely		Just			Perfect
0	5	6	7	8	9	10



ADMINISTRATION

The Universal Fitness Test is easy to administer.

The strength tests are the same tests as you'd use to improve your strength at home.

The aerobic fitness test requires participants to see how many laps of a 20m course they can complete in five minutes. It's an adapted version of the 'beep' test, equally reliable and valid but easier to administer.

It's important you do the tests in the order recommended. Do the 20m run test first, then the situps and pressups, followed by the squats and arm hang. If you do the squats before the situps you'll compromise your situps' score.



15. Universal fitness test award



The award is based on the lowest points scored for a particular test item. For example if you're a woman and complete 38 20mrun laps, 30 pressups, 15 situps, 25 squats and hang onto the bar for 30 seconds, the 15 situps count as the lowest score and you qualify for the 'green' award.

Highlight your best individual scores. To signify your Award, place a tick in the 'award' box (on the right hand side of the table) equal to the lowest score you achieved for the individual tests (as per the example below).

Level	Award	20m run - laps		Pressups	Situps	Squats	Arm hang (secs)		% body fat		Award
		Men	Women				Men	Women	Men	Women	
10	Platinum	55	52	70	70	70	100	80	<14	<24	
9	Diamond	53	49	60	60	60	80	60	<16	<26	
8	Ruby	50	46	50	50	50	60	50	<18	<28	
7	Emerald	45	43	40	40	40	50	40	<20	<30	
6	Gold	40	38	30	30	30	40	35	<22	<32	
5	Silver	38	36	25	25	25	35	30	<24	<34	
4	Bronze	36	34	20	20	20	30	25	<26	<36	
3	Green	32	30	15	15	15	25	20	<28	<38	
2	Amber	26	24	10	10	10	20	15	<30	<40	
1	Red	22	20	<10	<10	<10	10	10	<35	>45	
0	Black	<22	<20	<5	<5	<5	<10	<10	>35	>45	

Strength tests taken until exhaustion - without stopping. 20m run - laps in 5 minutes

POINT SCORING SYSTEM

You can also score points based on the level achieved for each test item.

Points received in the example above are:

Test	Points
20m run	
Pressups	
Situps	
Squats	
Arm hang	
% body fat	
Total / 50	

Fit-for-work and fit-for-life standards

The Fit-for-Work standards can be matched to suit the nature and demands of the job.

The **gold standard** is readily achievable by anyone who has a regular aerobic fitness and strength training program.

The platinum award is readily achievable by people who are highly trained and in excellent physical condition, particularly people in elite forces. Having said that, it's an extremely tough assignment for mere mortals.

16. About John Miller

John Miller, that's me. I live in Canberra, national capital of Australia where I write and publish health, fitness and wellbeing books. I also conduct corporate health programs, the most popular of which is the musculo-skeletal health program based on the principles outlined in this book.

I began my professional life as a PhysEd teacher. Along the way I've run a fitness centre where I developed this program.

I've had a bad back, so bad it felt like someone was ramming a red hot poker into it every time I sneezed or coughed. But that's in the past. I worked out how to get rid of the pain by doing the exercises I'm now passing on to you. I've been pain free for over 20 years.

You are always welcome to contact me at the email address below.

john.miller@millerhealth.com.au

For a lot more information visit

<http://pro-activerehab.com> — <http://www.globalbackcare.com> — <http://www.crookbackclinic.com>

I highly recommend Pete Egoscue's book, **Pain Free**.

<http://shop.egoscue.com/>



Fitness is not about
being better than
someone else ... it's
about being better
than you used to be.

17. Wait there's more – Miller Health ebooks, and audio files



The **Back Pain Relief** ebook is a cut down version of the Global Back Care **Fix Back Pain** ebook.

You can purchase the complete suite of books by visiting the <http://www.millerhealth.com.au/departmentstore/index.html> website.

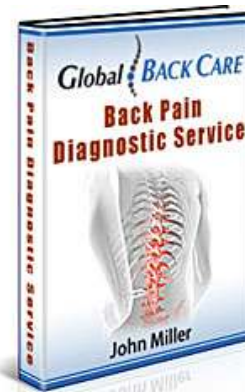
Back Pain Diagnostic Service

If you're serious about fixing up your back, neck, shoulders, wrists, hips, knees, calves, Achilles and shins, I highly recommend you sign up for the **Back Pain Diagnostic Service**.

You can read all about it, [on this link](#).

For a modest investment you'll receive

- the Back Pain Diagnostic and
- the complete set of ebooks



<http://www.globalbackcare.com/back-pain-diagnosis>

If the links won't open from this page, cut and paste them into your internet browser.

*Treat manipulative therapy as counting for only 20% of the rehab process.
What you do for yourself counts for the other 80%.*